

PIPETTEMANN CALIBRATION LABORATORY LLP

NABL ACCREDITED CALIBRATION LABORATORY

MASS - VOLUME - THERMAL - SPEED - TIME - ELECTRO TECHNICAL



CALIBRATION CERTIFICATE

CUSTOMER : M/s. CHRISTY FRIEDGRAM INDUSTRY PRIVATE LIMITED, ADDRESS : A-2,A-3,SIDCO INDUSTRIAL ESTATE, ANDIPALAYAM(PO), TIRUCHENGODE, NAMAKKAL 637214 LOCATION: MICROBIOLOGY	
UNIQUE LAB REPORT NUMBER : ULR- CC231726000000816F	DISCIPLINE : MECHANICAL CALIBRATION PARAMETER : VOLUME
NAME OF EQUIPMENT : MICROPIPETTE	RELEVANT : ISO 17025:2017 SECTION : Section 7.8.2 & 7.8.4
CERTIFICATE NUMBER : PCLCC260305714	DATE OF ISSUE : 05-03-2026
C.C.F NUMBER : PCL/25-26/00937	TEMPERATURE : 20.1 °C
DATE OF RECEIPT : 02-03-2026	HUMIDITY : 72 %
JOB CARD NUMBER : PCL302032605714	AIR PRESSURE : 966 hpa
JOB CARD DATE : 02-03-2026	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : P - FACT	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 1000 - 10000 µl	DENSITY CORRECTION FACTOR [Z] : 1.0028 µl/mg
SERIAL NUMBER : 393705 (37)	WEIGHING BALANCE : SEMI MICRO BALANCE
TIPS USED : 10000 µl	CALIBRATION PROCEDURE NUMBER : MSP 7.2.1.1-1
CALIBRATION LOCATION : AT LAB	CONDITION OF DUC RECEIVED : GOOD
METHOD OF CALIBRATION : Based on ISO 8655:2022 PART - 6 standards our calibration procedure : MSP 7.2.1.1-1 is applied for micropipette calibration.	
SCOPE OF ACCREDITATION : VOLUME - MICROPIPETTE (0.2 µl - 10000 µl)	

DETAILS OF MASTER EQUIPMENTS USED FOR CALIBRATION

MASTER EQUIPMENT	SL.NO	CALIBRATED BY	CERTIFICATE NUMBER	EQUIPMENT CALIBRATION VALIDITY	TRACEABILITY
SHIMADZU -1	D316301053	PIPETTEMANN CALIBRATION LABORATORY LLP (MASS), COIMBATORE	PCLCCM2602069	20-02-2027	NATIONAL STANDARD

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CERTIFICATE NO : PCLCC260305714

CALIBRATED PARAMETER : VOLUME NO.OF MEASUREMENTS : 10	Note: All Volumes are converted and reported @27 °C								
I) SELECTED VOLUME : 10000 µl									
10025.49 µl 10024 µl 10025.55 µl 10026.09 µl 10025.55 µl 10024.09 µl 10025.49 µl 10024.9 µl 10025.49 µl 10024.95 µl MEAN VALUE : 10025.16 µl SYSTEMATIC ERROR(es) : 25.16 µl RANDOM ERROR (Sr) : 0.67 µl Standard Limit Value (±60.00 µl) (±30.00 µl)									
II) SELECTED VOLUME : 5000 µl									
4982.01 µl 4981.41 µl 4982.01 µl 4981.47 µl 4982.01 µl 4979.81 µl 4980.02 µl 4979.86 µl 4982.01 µl 4981.47 µl MEAN VALUE : 4981.21 µl SYSTEMATIC ERROR(es) : -18.79 µl RANDOM ERROR (Sr) : 0.94 µl Standard Limit Value (±60.00 µl) (±30.00 µl)									
III) SELECTED VOLUME : 1000 µl									
1002.41 µl 1002.36 µl 1002.41 µl 1002.3 µl 1002.41 µl 1002.3 µl 1002.41 µl 1002.31 µl 1002.3 µl 1002.41 µl MEAN VALUE : 1002.36 µl SYSTEMATIC ERROR(es) : 2.36 µl RANDOM ERROR (Sr) : 0.05 µl Standard Limit Value (±60.00 µl) (±30.00 µl)									
CALIBRATED ON : 05-03-2026 CALIBRATION DUE ON : 04-03-2027									
RESULTS :	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width:50%;">RANGE</th> <th style="width:50%;">MEASUREMENT UNCERTAINTY</th> </tr> </thead> <tbody> <tr> <td>10000 µl</td> <td>6 µl</td> </tr> <tr> <td>5000 µl</td> <td>6 µl</td> </tr> <tr> <td>1000 µl</td> <td>0.30 µl</td> </tr> </tbody> </table>	RANGE	MEASUREMENT UNCERTAINTY	10000 µl	6 µl	5000 µl	6 µl	1000 µl	0.30 µl
RANGE	MEASUREMENT UNCERTAINTY								
10000 µl	6 µl								
5000 µl	6 µl								
1000 µl	0.30 µl								
With coverage factor k is 2 for effective degress of freedom is ∞ and the confidence level is 95%									
CALIBRATED BY : (M.VINOTH KUMAR) DEPUTY TECHNICAL MANAGER	AUTHORIZED SIGNATORY : (K.BALA MAYUR PRIYAN) TECHNICAL MANAGER								
NOTE : 1.The recalibration interval should be determined on the user requirement 2.Master equipments used for calibration are traceable to National standards 3.The calibration reported are valid at the time of and under the stated conditions of the measurement 4.Results presented in this certificate relate only to the item mentioned & calibrated at PIPETTEMANN CALIBRATION LABORATORY LLP 5.This certificate shall not be reproduced except in full without written approval of PIPETTEMANN CALIBRATION LABORATORY LLP 6.All precautions have been taken to avoid any error or omission while calibrating the DUC and issuing this certificate 7.The volume measurements are recorded as observed.Hence the results are reported without any adjustment.									